

Title (en)  
Hands-free telephone.

Title (de)  
Frei-Hand-Telefon.

Title (fr)  
Téléphone mains libres.

Publication  
**EP 0330384 B1 19931103 (EN)**

Application  
**EP 89301554 A 19890217**

Priority  
• JP 3390288 A 19880218  
• JP 25204688 A 19881007

Abstract (en)  
[origin: EP0330384A2] In order to perform voice-switched telephoning, a hands-free telephone includes a speaker, a microphone, a receive variable attenuator (R-ATT), a transmit variable attenuator (T-ATT), a receive signal detector, a transmit signal detector and an attenuation control circuit. The telephone also includes an auxiliary control circuit which prevents the output of the transmit signal detector from reaching the attenuation control circuit during a transient period between a call origination and the beginning of conversation. During the transient period, only the speaker is enabled to output a ringback tone therethrough. When the output level of the transmit signal detector exceeds a predetermined level, the auxiliary control circuit passes the output of the transmit signal detector to the attenuation control circuit to start the voice-switched telephoning. Once the auxiliary control circuit passes the output of the transmit signal detector, it holds this state until the conversation finishes.

IPC 1-7  
**H04M 9/10**; **H04M 1/72**

IPC 8 full level  
**H04M 1/60** (2006.01); **H04M 9/08** (2006.01); **H04M 9/10** (2006.01); **H04Q 7/20** (2006.01); **H04Q 7/38** (2006.01); **H04W 88/02** (2009.01)

CPC (source: EP US)  
**H04M 9/08** (2013.01 - EP US); **H04M 9/10** (2013.01 - EP US)

Cited by  
US5619566A; EP0929174A3; GB2261138A; US5379450A; GB2261138B; EP0472289A3; US5172408A; WO9506382A3

Designated contracting state (EPC)  
DE GB NL

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**EP 89301554 A 19890217**; CA 591453 A 19890217; DE 68910346 T 19890217; HK 84597 A 19970619; JP 25204688 A 19881007; US 31320989 A 19890221; US 41761789 A 19891005